Title Integrated control of blue mold in pear fruit by combined application of chitosan, a biocontrol yeast and calcium chloride

Author Ting Yu, Chen Yu, Fangxia Chen, Kuang Sheng, Tao Zhou, Mahbuba Zunun, Ornisa Abudu, Sheng Yang and Xiaodong Zheng

Citation Postharvest Biology and Technology. Volume 69, July 2012, Pages 49–53

Keywords Biocontrol; *Cryptococcus laurentii*; *Penicillium expansum*; *Pyrus pyrifolia*; Postharvest

Abstract

This study evaluated the performance of chitosan at different concentrations alone, and in combination with a biocontrol yeast *Cryptococcus laurentii* and calcium chloride, on the reduction of the blue mold decay caused by *Penicillium expansum* in pears. The efficacy of chitosan in inhibiting fungal infections in pear wounds was decreased as incubation time increased. The combination of chitosan at 0.5% and *C. laurentii* resulted in more effective mold control than chitosan or *C. laurentii* alone, although chitosan at 0.5% inhibited growth of this biocontrol yeast *in vitro* and *in vivo*. The effectiveness of the combined treatment with chitosan and biocontrol yeast was also significantly reduced with the incubation time. Calcium chloride had little antifungal activity, however integration of calcium chloride with chitosan and *C. laurentii* resulted in a more effective and stable reduction in the fungal decay compared with the treatment with either chitosan or with *C. laurentii* alone.